

## Calendar

### Thursday, June 2

**2:30 p.m.** Theoretical Physics Seminar - Curia II

Speaker: S. Chivukula, Michigan State University

Title: Higgsless Models in AdS: Lessons from Deconstruction

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

### Friday, June 3

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

**4:00 p.m.** Joint Experimental Theoretical Physics Seminar - 1 West

Speaker: Y. Kamyshkov, University of Tennessee

Title: Baryon Number Violating Processes and the Proton Driver

## Weather



Partly Cloudy **81°/57°**

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

[Secon Level 3](#)

## Wilson Hall Cafe

## Konstantin Anikeev Wins 2005 URA Thesis Award



Christoph Paus (left) nominated Konstantin Anikeev (right) for the 2005 URA Thesis Award. (Click on image for larger version.)

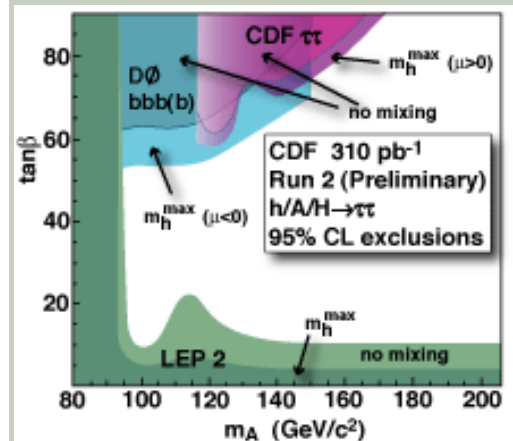
After a unanimous decision, the URA Thesis Award Committee selected CDF's Konstantin Anikeev as the winner of the 2005 URA Thesis Award. The winning thesis entitled, "Measurement on the lifetimes of B meson mass eigenstates," analyzes the  $B_s$  meson and its ability to spontaneously become its own antiparticle.

"Neutral B mesons mix, and as time goes by, matter can become antimatter," Anikeev said. "As a result of this mixing, we can observe two separate particles that have different properties, such as mass and lifetime. We attempted to measure the lifetime difference, and we noticed that the difference could be very large."

CDF's Christoph Paus, Anikeev's thesis advisor at MIT, was one of the physicists who nominated the thesis for the award. "I was very impressed with how accurately Konstantin wrote his thesis," Paus said. "The analysis itself is very exciting because it allows you to test the Standard

## Fermilab Result of the Week

### A Tale of Two Taus



The magenta region is excluded by the CDF search for MSSM Higgs boson decaying to tau pairs. The horizontal axis is the mass of (one of three) neutral Higgs boson predicted by supersymmetry, and the vertical axis is tangent beta, which governs how the Higgs gives mass to up-type and down-type quarks. (Click on image for larger version.)

Often in physics quality matters as much as quantity. This is the case with the new result from CDF in the search for the Higgs boson, looking for its decays to pairs of tau leptons. The tau lepton, discovered thirty years ago, is the heaviest cousin of the electron at 1.8 GeV in mass. One out of ten Higgs bosons is expected to decay to pairs of taus; the remaining nine go to b quark-antiquark pairs.

As of yet undiscovered, the Higgs particle (or particles, as in the case of supersymmetry) is thought to be responsible for imparting mass to the other Standard Model particles. Most Higgs searches tend to focus on decays to b quarks, but looking for Higgs decays to taus has advantages — we can look for the Higgs produced alone. Searches for the b decay modes require the presence

## Thursday, June 2

Minnesota Wild Rice with Chicken  
Tuna Melt on Nine Grain \$4.85  
BBQ Ribs \$3.75  
Chicken Casserole \$3.75  
Buffalo Chicken Wrap \$4.85  
Cheesey Breadsticks \$2.50  
Chicken Pecan Salad \$4.85

The Wilson Hall Cafe now accepts Visa,  
Master Card, Discover and American  
Express at Cash Register #1.

[Wilson Hall Cafe Menu](#)

[Chez Leon](#) is now open. Call x4512 to  
make your reservation.

### Search

Search the Fermilab Today Archive

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Model." Both Anikeev and Paus consider the analysis, which was done in collaboration with Yale University, to be quite interesting because of its potential implications on the particle physics field.

The selection committee, which in the past has announced the winner at the annual Users' Meeting, decided to publicize the award recipient early this year. URA President Fred Bernthal will present Anikeev with the award at the 2005 Users' Meeting on Thursday, June 9. "Research carried out by graduate students at Fermilab under university faculty advisors and Laboratory scientists led to the award of some 70 Ph.D. theses in 2004," Bernthal said. "We thank Steve Wolbers and his Thesis Award Committee for their superb work. I look forward to presenting the award to Dr. Anikeev." URA Vice President Ezra Heitowit added, "We are pleased that beginning this year, the eligibility pool for the award has been extended beyond those doctoral theses submitted to URA member universities to include all domestic and foreign institutions involved at Fermilab."

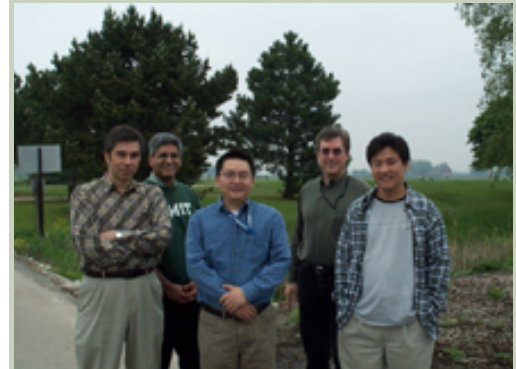
The chair of the award committee, Steve Wolbers, explained that they selected Anikeev's thesis for its uniqueness and the quality of the measurement. "This kind of analysis had never been done before, and it was incredibly complete," Wolbers said. "It was very well written and had a good set of measurements that will have an impact on particle physics."

--Elizabeth Clements

## Scientific Linux V4 Release

of "extra" objects such as other b quark pairs produced along with the Higgs, or a W or Z boson. In the case of tau pair decays, the main background comes from decays of the Z. An analysis team from CDF uses the tau pair mass to distinguish the Higgs signal from the Z background.

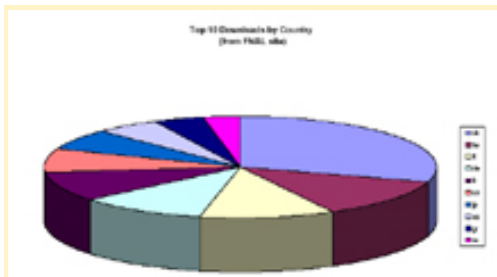
No signal is observed, so the team uses the result to exclude regions of the supersymmetry parameters  $m(A)$ , the mass of the pseudoscalar Higgs boson, and  $\tan \beta$ , a parameter which governs how the Higgses give mass to up and down-type quarks and leptons. As Run II continues, the increased dataset will give CDF sensitivity to ever-lower values of  $\tan \beta$ , and with luck, perhaps a discovery of the Higgs boson at last!



The CDF Higgs->tau+tau team includes Anton Anastassov, Amit Lath, Zongru Wan, and Dongwook Jang from Rutgers University, and John Conway from the University of California, Davis. (Click on image for larger version.)

[Result of the Week Archive](#)

## Training Course Boosts Firefighters' Confidence



Top 10 Downloads by Country (from FNAL site) (Click on image for larger version.)

On April 20, the Scientific Linux development team, a collaboration of scientists and computer professionals from Fermilab and CERN, announced the production release of Scientific Linux v4.0. Scientific Linux is an operating system developed especially for scientific researchers.

Its developers created Scientific Linux to provide the scientific community with a supported, stable, customizable, freely available operating system designed to be compatible with the equivalent commercially-supported Linux distribution-RedHat's "Enterprise Linux." Scientific Linux, supported by the global research community, is distributed to scientists free of charge.

"We don't just take RedHat source code and repackage it," said co-lead developer Connie Sieh, a member of the Fermilab Computing Division. "We add features that are customized for the scientific community."

[read more](#)

--Jack Schmidt and Connie Sieh

## Accelerator Update



From left to right: Richard Graff, Neil Dal Cerro, Greg Hansen, Brian Schopp and James Mullins stand beside the training course. (Click on image for larger version.)

Fermilab's Fire Department met the challenge last week in the Self-Contained Breathing Apparatus (SCBA) Confidence Course, a mobile training facility for firefighters. Funded by several surrounding communities, the Course visits each firehouse twice a year to remind firefighters of conditions inside a burning building. A series of obstacles constructed in the rear of a truck simulate these conditions, which include collapsed floors and ceilings, exposed wiring and obscured visibility. FFD Acting Lieutenant Greg Hansen displayed the narrow, short passages that are filled with theatrical smoke for the exercise.

Firefighters enter the SCBA course in pairs and are equipped with the gear needed in a real fire. Brian Schopp and James Mohns explained that while the voice amplifiers, air tank and heavy suit are vital to a real fire situation, they present an additional challenge in the cramped space of the training course. Hanging wires and other obstructions are designed to snag on the firefighters' equipment, forcing them to untangle themselves and continue moving without loss of time and with limited air supply.

Even during a simulation, a strong sense

## May 27 - June 1

- During this 144 hour period Operations established 4 stores that combined with an existing store provide the experiments with approximately 101 hours and 41 minutes of luminosity
- Booster off for LCW leak and kicker spark
- Store aborted due to controller problem
- Debuncher Pulse Magnet replaced

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

## In the News

### From *NewsForge*, May 27, 2005

#### My Workstation OS: Scientific Linux

by William Roddy

Scientific Linux (SL) might seem a strange choice as a desktop operating system for someone who is retired, disabled, and elderly, and who has relatively little scientific or programming knowledge, but I get great excitement from exploring the art of Linux distributions, and with Scientific Linux, that excitement is amplified by knowing I'm using the same operating system that is being used by many of the world's leading scientists.

Scientific Linux has been around for quite some time, but has made no effort to publicize itself in other than the scientific community. An announcement of upgrade on DistroWatch gained the attention of a wider community.

Scientific Linux began as Fermi Linux, at the famous Fermilab, whose mission is to explore high-energy physics, the science of matter, and space and time. Scientific

of the risks involved in their work pervades the atmosphere of ease and camaraderie that surrounds the team. Focused on safety for each other and for the entire Fermilab community, firefighters still joke around when time allows. As Schopp and Mohns safely emerged from the billowing — though fake — smoke, team leader Neil Dal Cerro commented, "This exercise can be a lot of fun."

--*Amelia Greene*

## Announcements

### Register for the 2005 Fermilab Users' Meeting

It's not too late to register for the 2005 Fermilab Users' Meeting. Join us for:

- Presentations from representatives of DOE, NSF and OSTP, with Q&A
- Latest results from Fermilab experiments
- An insider's view of the EPP 2010 panel
- Status of future initiatives at the lab and in HEP as a whole
- Free catered dinner at the Users Center...but only if you REGISTER! Registration is free, and can be done online at the [Users' Meeting](#) Web site.

### Scuba Lessons at Fermi Pool

The Underseas Scuba Center in Villa Park will be conducting Scuba Diving Certification classes at the Village pool on Thursdays from 5:30 p.m. to 8:30 p.m. beginning June 9 - July 14. 1 1/2 hours are spent in the classroom at the Users Center and 1 1/2 hours are spent in the pool. The cost for this class is \$225.00 per person. Deadline to register is June 3. [more information](#)

### Fermi Summer Picnic and Cougar Game - July 30

Linux is a vendor-cleansed version of the latest Red Hat Enterprise Linux, completely recompiled from source. Stable versions include the 3x and 4x vendor tree and are called Scientific Linux, though they still bear the earmarks of the Fermilab craftsmanship that is a major part of it. It is completely open source, free, and available to anyone.

[Read more](#)

Join us under the tent at the Kane County Cougar Stadium for a picnic and baseball game (Cougars vs Quad City Twins), on Saturday, July 30. This event is open to Fermilab employees, visiting researchers, retirees, on-site contractors and their immediate families and friends (must be accompanied by someone working at Fermilab). The picnic will begin at 4:00 PM under the Fermilab tent and run until 6:00 PM. The game with reserved seating begins at 6:00 PM. The cost for the whole event is only \$12.00 per person, which includes your reserved game ticket and all-you-can-eat buffet. Deadline for registration is Friday, June 17.

[more information](#)

[Upcoming Activities](#)